AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 1, line 18, of the specification as follows:

Also, as an optical modulator, which corresponds to a dense wavelength division multiplexing (DWDM) technology and high speed communication technology, the optical modulator which modulates a light from CW (Continuous Wave) laser using a Mach-Zehnder ~~(MZ)~~ Interferometer (MZI) type external optical modulator (hereinafter described as LN optical modulator) using a material having the electrooptic effect, such as lithium niobate (LN), have been put to practical use.

Please amend the paragraph beginning at page 1, line 26, of the specification as follows:

As shown in Fig. 1, the ~~MZ~~ MZI type external optical modulator is configured to divide a light inputted from an input optical waveguide 2 in half with a Y-shaped branching optical waveguide 3, to combine the lights guided through two optical waveguides 4 (the optical waveguides, wherein a light guided inside receives a phase control by the electrooptic effect of an electric field formed by a modulating electrode and a grounding electrode, which are control electrodes; hereinafter described as an optical waveguide modulation part) with another Y-shaped branching optical waveguide 5, and to put the modulated light to the exterior via an output optical waveguide 6. Each of these optical waveguides is formed by thermal diffusion of a high refractive index material such as Ti, on the surface of a substrate 1 having the electrooptic

effect. In Fig. 1, the control electrodes such as the modulating electrode and the grounding electrode formed on the substrate 1 are omitted in order to make the shape of the optical waveguides easily understood.

Please amend the paragraph beginning at page 2, line 23, of the specification as follows:

Fig. 2 is a cross-section view of the ~~MZ~~ MZI type optical modulator shown in Fig. 1 along the dashed line A in a direction perpendicular to the optical waveguide modulation part 4. 7 in Fig. 2 indicates a buffer layer formed from SiO_2 or the like.

Please amend the paragraph beginning at page 3, line 9, of the specification as follows:

Additionally, besides the above-described ~~MZ~~ MZI type optical modulator, such stress-strain due to concentration of stress is also generated when a recess is formed in the surface of a substrate which forms an optical modulator and an electrode such as a grounding electrode is formed over said recess. Especially when an optical waveguide is formed adjacent to the recess, the influence of the stress-strain on optical modulation control becomes prominent.

Please amend the paragraph beginning at page 7, line 21, of the specification as follows:

Like LN substrate, when ~~When~~ the optical modulator comprises the substrate (hereinafter described as Z cut substrate) having the direction of a crystal axis which can change the refractive index in the vertical direction to the substrate surface in the most effective manner by the electrooptic effect, grooves are sometimes formed on both sides of the optical waveguide such that the grooves sandwich the optical waveguide, for the purpose of performing electrooptic effect of an electric field on the optical waveguide effectively since it is necessary to impress the

electric ~~filed~~ field in the vertical direction to the substrate surface. In accordance with the invention ~~related to Claim 8~~ as described in the preceding paragraph, by applying the technology for providing the stress relaxing means for the control electrode formed on the recess, which is disclosed ~~in any of Claims 1 to 7~~ previously, to such optical modulator having the Z cut substrate, it becomes possible to provide the optical modulator with superior characteristics (stability of bias point).

Please amend the paragraph beginning at page 8, line 6, of the specification as follows:

In addition, in another aspect of the invention ~~related to Claim 9 provides~~ the optical modulator ~~as claimed in any of Claims 1 to 8,~~ is characterized in that said control electrode with said stress relaxing means is a grounding electrode.

Please amend the paragraph beginning at page 8, line 22, of the specification as follows:

Fig. 1 is a diagram showing a ~~MZ~~ MZI type optical modulator.

Please amend the paragraph beginning at page 9, line 5, of the specification as follows:

The substrate which configures an optical modulator is made of a material having an electrooptic effect, such as ~~lithum~~ lithium niobate ($LiNbO_3$; hereinafter referred to as LN), lithium tantalite ($LiTaO_3$), PLZT (lead lanthanum zirconate titanate) or quartz-based material. In particular, it is preferable to use an $LiNbO_3$ crystal, an $LiTaO_3$ crystal, or a solid solution crystal made of $LiNbO_3$ and $LiTaO_3$ due to the fact that an optical waveguide device can be easily formed of any of these crystals which have a large ~~anisotropy~~ electrooptic constant. The present invention embodiments primarily refer to an example using lithium niobate (LN).

Please amend the paragraph beginning at page 10, line 5, of the specification as follows:

A ~~MZ~~ MZI type optical modulator as shown in Fig. 1 is explained as the embodiment of the present invention.

Please amend the paragraph beginning at page 10, line 13, of the specification as follows:

The light passing through the input optical waveguide 2 is divided in half by a 3dB branching optical waveguide 3, which is a first branching optical waveguide. Each divided light enters an optical waveguide modulation part 4 configuring the arms of the Mach-Zehnder Interferometer optical waveguide.

Please amend the paragraph beginning at page 16, line 23, of the specification as follows:

Moreover, although the present invention was explained exemplifying the ~~MZ~~ MZI type LN optical modulator using the Z cut substrate, it is obviously possible to apply the present invention to an optical modulator using other substrate materials that have an electrooptic effect, and an optical modulator comprising an optical waveguide in other shapes.